

Claims

1. An immunogenic composition comprising IPV and a stabilising agent formulated as a dried composition, which after reconstitution, is capable of generating an immune response against polio virus.
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2. The immunogenic composition of claim 1 comprising IPV and a bacterial polysaccharide, both formulated as a dried composition, which after reconstitution is capable of generating an immune response against polio virus.
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3. The immunogenic composition of claim 1 or 2 comprising a capsular polysaccharide or oligosaccharide antigen from *Haemophilus influenzae* b (Hib).
4. The immunogenic composition of claim 2 or 3 wherein the polysaccharide or oligosaccharide is conjugated to a carrier protein.
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5. The immunogenic composition of claim 4 wherein the polysaccharide or oligosaccharide is conjugated to tetanus toxoid.
- 20 6. The immunogenic composition of claim 3-5 wherein the polysaccharide or oligosaccharide is adsorbed onto aluminium phosphate.
7. The immunogenic composition of claim 1-6 comprising a capsular polysaccharide or oligosaccharide derived from *N. meningitidis* C.
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8. The immunogenic composition of claim 1-7 additionally comprising a capsular polysaccharide or oligosaccharide derived from any of *N. meningitidis* A, Y or W or combination thereof.
- 30 9. The immunogenic composition of claim 7-8 wherein the meningococcal polysaccharides or oligosaccharides are conjugated to a carrier protein.

10. The immunogenic composition of claim 9 comprising a Hib polysaccharide or oligosaccharide and at least one meningococcal polysaccharide or oligosaccharide conjugated to the same type of carrier protein.
- 5 11. The immunogenic composition of claim 9 comprising a Hib polysaccharide or oligosaccharide and at least one meningococcal polysaccharide or oligosaccharide conjugated to different carrier proteins.
12. The immunogenic composition of claim 1-11 further comprising phenol red.
- 10 13. The immunogenic composition of claim 1-12 wherein the dried composition is freeze dried.
14. The immunogenic composition of claim 1-13 wherein the dried composition is a foamed glass.
- 15 15. The immunogenic composition of claims 1-12 wherein the dried composition is a highly viscous liquid.
- 20 16. The immunogenic composition of claim 15 wherein the highly viscous liquid has not been frozen.
17. A method of making a vaccine comprising the step of reconstituting the immunogenic composition of claims 1-16 in an aqueous solution.
- 25 18. The method of claim 17 wherein the aqueous solution comprises Diphtheria toxoid, Tetanus toxoid and Pertussis antigens (acellular or whole cell).
19. The method of claim 18 where the DTP vaccine is at least in part adjuvanted with aluminium hydroxide.
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20. The method of claim 18 or 19 wherein the aqueous solution comprises Hepatitis B surface antigen.
21. A kit comprising the immunogenic composition of claims 1-16 in one container
5 and liquid DTP (acellular or whole cell) vaccine in a second container.
22. The kit of claim 21 further comprising Hepatitis B surface antigen in the second container.
- 10 23. A vaccine comprising the immunogenic compositions of claims 1-16.
24. The vaccine of claim 23 which is reconstituted into an aqueous solution prior to use.
- 15 25. A container with a water repellent internal surface containing the vaccine of claim 23-24.
26. A method of preserving a composition comprising IPV and a stabilising agent comprising the steps of:
- 20 a) preparing a preservation sample by suspending or dissolving IPV in a solution of a stabilising agent;
- b) subjecting the preservation sample to such temperature and pressure conditions that solvent is lost from the preservation sample ; and
- c) removing solvent until the preservation sample dries to form a solid or highly
25 viscous liquid in which the antigenicity of IPV is retained.
27. The method of claim 26 wherein the preservation sample is dried in a container with a water repellent interior surface.
- 30 28. The method of claim 26 or 27 wherein the preservation sample bubbles to form a foam during step b).

29. The method of claim 28, wherein the sample is at least partially frozen before commencing the drying process.
- 5 30. The method of claim 28 wherein the preservation sample becomes at least partially frozen during step b).
- 10 31. The method of claim 26 wherein, during step b) the preservation sample is subjected to such temperature and pressure conditions so that the preservation sample loses solvent by evaporation, without freezing or bubbling involved in foam formation, to form a viscous liquid and during step c) solvent is removed until the preservation sample dries to form a highly viscous liquid.
- 15 32. The method of claim 26-31 wherein the preservation sample comprises a bacterial polysaccharide.
33. The method of claim 32 wherein the preservation sample comprises Hib polysaccharide or oligosaccharide.
- 20 34. The method of claim 32 or 33 wherein the preservation sample comprises polysaccharide or oligosaccharide derived from any of *N. meningitidis* A, C, Y or W or combination thereof.